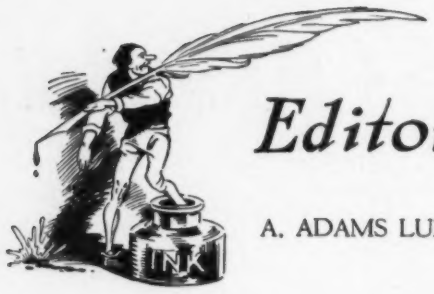


Editorial

A. ADAMS LUND, Editor

"Bread Cast Upon the Waters"

WE quote from a recent issue of Tide:

"As everyone knows, Lucky Strike has discharged from its advertising war its anti-sweet army. But when the Spreckels campaign was started the American Tobacco Company was still saying 'Reach.' The opening Spreckels gun, unmindful of the contemplated Lucky change, indirectly boomed against Lucky-reaching. It spoke about 'health being imperilled by dangerous diet fads,' about abstemious use of sugar being caused by 'fashions . . . food fads.' But fundamentally the campaign is more than retaliation. Sugarman Spreckels' slogan is 'Crystallized Energy.' The theme of each advertisement is the energy-giving value of all sugar, the special energy-giving value of Spreckels' Cane heart Sugar.....

"One advertisement read, in part: 'Physicians are agreed that as a nation we are not eating nearly as much sugar as health demands we should. . . .'"

From another quarter comes word of a contemplated consumer educational campaign on refined dextrose as a health ingredient in candy and other sweet foods. Such advertising is of inestimable value to the candy industry. While neither campaign is intended for the sole benefit of any individual group of sugar consumers, confectioners are bound to profit by it and their prosperity will be reflected back to the sugar people in the form of larger purchases of the respective sugars.

Could more of the producers of the raw materials entering into candy see the wisdom of this type of advertising and its tangible results to themselves, they would certainly indulge in it more freely. If a raw material possesses qualities which enhance the healthfulness or desirability of the finished product, tie the former up with the latter if you would obtain maximum value from your advertising.

The average consumer does not study a finished product in terms of its component parts nor is he likely to appreciate the value of these individual elements as affecting the whole unless somebody tells him. But when the producer of a primary raw material begins to take the consumer into his confidence in this manner, manufacturers will more and more find it to their advantage to tie up with that producer's advertising by telling their customers that the candy or the jelly or the biscuit they buy contains that splendid ingredient. Advertising pays its highest dividends when it takes into account the interests of those whom it is designed to sell.

Two Sides of An Interesting Controversy

ACCORDING to the census figures compiled by the United States Department of Commerce, two facts are of outstanding significance to the candy industry. One is that the average price of candy throughout the country is around 60 cents a pound. The other is that the candy industry is only working to about 60 per cent of its productive capacity. Either discovery, by itself, is sufficient to give one pause. Taken together, they throw a new light on the price revolution which has been going on steadily and mercilessly during the last ten years.

Fundamentally, no issue is involved between quality and price. It is a matter of decreasing profit margins to the tune of increased production—quality remaining

unchanged. It is a matter of giving the consumer more for his money, not of deceiving him by cutting the quality to meet his demand for a lower price. It is a process in which derelictions from the straight and narrow path earn swift retributive justice. Quality must increase to meet the consumer's fancy. Price must go down to take up the 40 per cent slack in our productive capacity and to meet the competition of other industries.

For ten years the debate has been going on behind closed doors. Shall we cut prices and fill the plant with orders or continue to work part time on what is now believed to be a reasonable mark-up? Will low prices provide the answer to factories which are now 40 per cent below their production capacities? Will candy become a household staple when its price falls in line with other staples?

Many firms have discussed the problem coldly and frankly in the inviolate atmosphere of their most private sanctums. They cannot afford to be left out of the procession. They cannot afford to risk their present business upon a mistaken judgment. It is a serious dilemma. Who will provide the answer?

But problems like this have a way of taking care of themselves, to the renown or damnation of individual manufacturers. Obviously, the problem has two sides. Which will you take?

The Argument for Low-Priced Candies

LOW priced candies will mean more business.

More people will be able to afford candy when it is lower priced. Luxury candies can always be handled as a separate proposition, but the proportion of luxury to staple business is small. If we want to reach the family and make candy part of the menu, we must compete with other food products. The Department of Commerce says the average price of candies of all kinds is 60c per lb.

This is a high average price to pay for a carbohydrate. If we want the public to regard candy as a food, we must bring the price within range of other staples.

The assumption that people will go on buying candy simply because they like it is a dangerous premise since it is possible for them to satisfy their craving sweets with ice cream, pastry and many other competitive forms of sweets which are sold at lower prices. The job is to make people realize that in addition to being a likeable product, a fact which they already know, candy is also a healthful product for them to have. They must be encouraged to look upon candy as an inexpensive and healthful means of satisfying the sweet tooth.

Henry Ford has the right idea. Simultaneously, he cut the cost of his cars and increased wages all around. He brought his cars within range of more people and then provided huge numbers of these people with more of the wherewithal to buy his cars. The fact that the candy industry is only operating to 60 per cent of its productive capacity is an unanswerable indictment of present methods in the candy industry.

Argument Against Low-Priced Candies

LOW prices take the mystery and charm out of candy. It becomes a prosaic food product devoid of adventure and romance. What swain would give his girl assorted chocolates priced at 39c per lb.?

People do not eat candy because it is a food or because it is good for them. They eat it because they like it. The job of creating more candy eaters is primarily a job of making more people *like* candy. If people merely want sugar, they can buy sugar at much less than 39c per lb. Low priced candies will hurt the candy business by taking out of it what little profit there is in it. It will reduce it to the status of a grocery staple.

Let the manufacturer learn to make better and better candies rather than add to the horrible examples of cheap candy which already flood the market. Cheap candies injure the entire fabric of the candy business by turning people away from candy and into other channels of luxury consumption. The psychology of the thing is summed up in the discovery of Mark Twain's immortal Tom Sawyer, that in order to make a person desire a thing it was only necessary to make it difficult to attain. If you get candy thrown at you from every delicatessen and grocery store, half of the novelty and pleasure of anticipation is gone. Make them save up their pennies to pay for it. Sell more good candy at a reasonable profit.

Luxuries, like love, must be wooed and won to be appreciated.

And now, Mr. Candy Manufacturer, we will be glad to hear your views. The controversy is out in the open with both sides about evenly matched—what are your ideas on this subject?

Air flotation has opened vast new markets for low fat cocoa powders. These powders find their greatest outlet in the baking and ice cream industries. But still more spectacular is the way in which it has opened up whole new industries in cocoa and malt preparations and carbonated cocoa beverages.

Air Flotation Speeds Goal of "Soluble" Cocoa

By EUGENE B. EDWARDS

WHEN the introduction of so radically different a process as the "wind-shifting" of cocoa powder is accomplished by a campaign of exaggeration and ballyhoo, it is only natural that there should exist in the minds of many a serious misconception of its real purpose and value to the trade. That the process is a most valuable one there can be no doubt, but it certainly does not possess the miracle-working powers ascribed to it by many cocoa powder manufacturers. What it has done is to make possible the use of extremely low fat powders. It has done much to simplify the manufacture of powders in general but it cannot remove the results of careless workmanship elsewhere in the fabricating process, or make poor materials good.

The so-called wind-sifting process as applied to cocoa powder is not the outcome of an attempt to improve cocoa powders in general, but was adapted solely for the purpose of sifting very fat-dry products. That it is applicable to the finishing of the old and higher fatted type cocoas is accidental. So far as we know, there is no other way to manufacture the cheaper, low-fat powders, whereas in the manufacture of the higher-priced goods, air flotation is merely an alternate, the older methods being as effective today as they ever were, though perhaps a little more troublesome.

The need for such a process as wind-sifting in the cocoa industry is of quite recent date, resulting from the tremendously increased demand for cocoa butter and the necessity of finding a market for the by-product of its manufacture.

Early Standards of Quality

In the early days of the industry, in fact up until very recently, all

cocoa powders contained a comparatively high percentage of cocoa butter. The power presses of today were not possible then; in fact, were not wanted. Cocoa butter was a secondary product; the money was in the powder.

The prime requisites of a good cocoa powder were the same then as now—it must taste good and it must stay in suspension. The taste depended most upon the character of materials used and the suspension upon how finely the nibs were ground in the mills. Sieving would not remove the heavier particles as the sieve sizes were invariably large. Therefore the main factor in the manufacture of a powder with good suspension was and still is with this type of cocoa, the milling of the liquor. The texture of the finished powder itself had nothing whatever to do with it. I know that this statement may seem all wrong but it is a fact, nevertheless. The bond between the particles of cake resulting from the low pressure process is so weak that the moisture introduced in mixing will readily break down these seemingly coarser high fat powders to the smaller, mill size particles.

While the fine powdering of the better grades of powder was not vital, there were certain natural limits as to texture, the regulating of which constituted one of the problems of the industry. It was practically impossible to get more than a few hours' use out of even a comparatively coarse screen before its meshes became clogged. No matter how cold the pulverized material might be, friction would release enough fat to make it partly sticky. In eliminating this, air flotation has helped in the manufacture of high fatted cocoa.

It will be seen that while dust-fine powders could not possibly be made from high fatted material, it was no hardship since the nature of the product did not require it. The reverse is true of today's products of hard pressing.

Powder Becomes Secondary Product

When the demand for cocoa butter became so great that it exceeded the demand for powder, manufacturers naturally began to seek some means of getting more butter out of the cake, particularly when it became apparent that the lack of a powder market was certain to lower powder prices. This search went right back all the way to the roasting process, developing a new conception of the powder itself as well as of the methods of producing it. The types of beans giving the highest butter yield were naturally favored and profited by an increase in consumption.

Roasting was continued almost to the burning point in order to get a more friable and easily ground nib. Liquor mills were changed, larger stones with improved cutting surfaces were employed to break the nibs into such small fragments as to ensure the breaking of every last fat cell. Presses were built larger and stronger in order that higher pressures might be used, the press pots were made wider and shallower in order that the pressure might be more efficiently applied. New methods and processes were developed to assist these new machines.

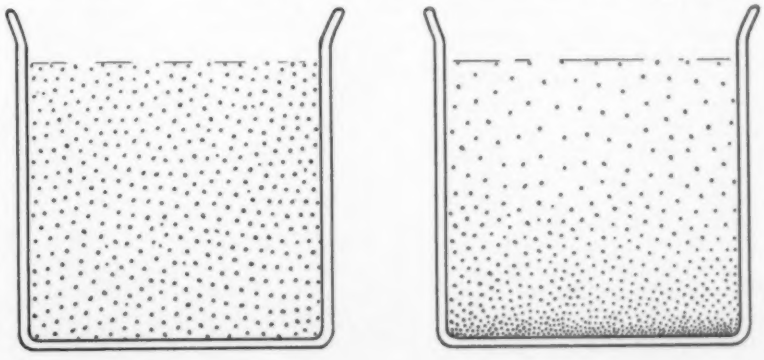
It was all quite an advance in method so far as the manufacture of cocoa butter was concerned, though it looked for a time as if the by-product of these changes would have no other use than for fertilizer since there was no really satisfactory method of reducing the press cake to a usable powder.

Cake from these high power presses is hard, so hard in fact are the particles pressed together that they have an almost unbreakable bond. It does not break down with ease as does the low pressed product and in order to get a disintegration approaching the particle size of the original liquor, a machine of the rock-crusher type is required. Now the powder must be within measurable distance of such a degree of fineness or it will precipitate or speck. Numerous disintegrators and crushers are available which will give an extremely fine average grind but none which will give one fine enough to prevent separating; a certain percentage of grit invariably remains.

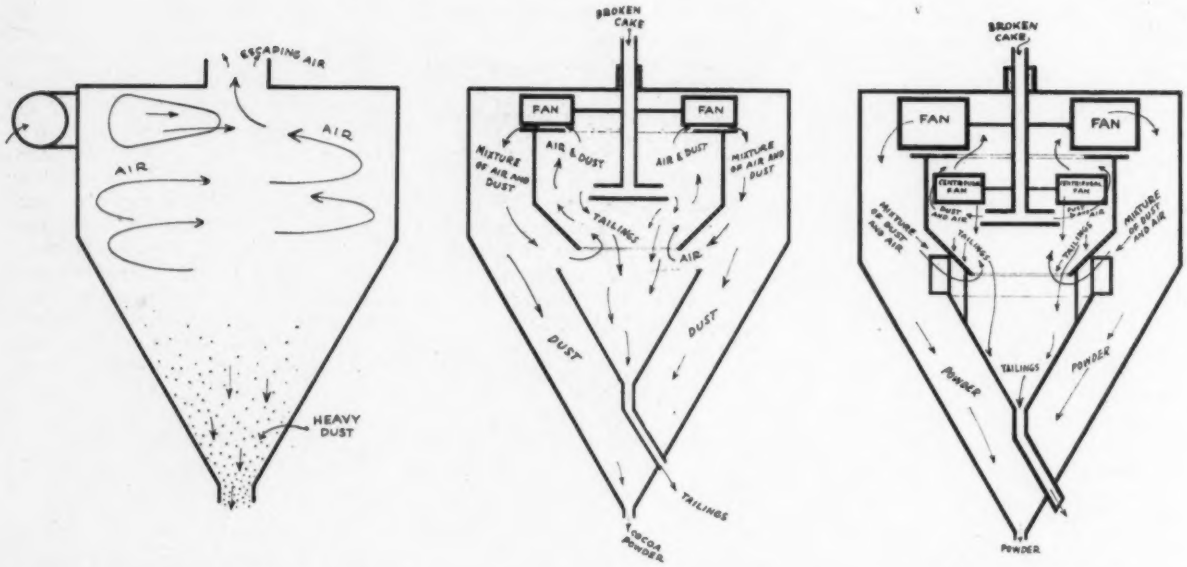
Screening Falls Down

As most of these grits were no larger than many of the grains of a high fatted powder, the natural thing to try was a finer mesh screen; it had to be somewhere between 100 and 150 count. This was tried but notwithstanding the low fat content, refused to work, the sieves quickly filling up. Developing a satisfactory process has taken years, and in fact it has only been a year or two since a really satisfactory one has been completed. In the meantime, high pressed powder was miserable stuff, most of the cake not even being powdered but sold to solvent extractors. Except during times of extremely high butter prices, the game was not worth the trouble.

Europe, Germany in fact, first applied the so-called "wind-sifting," or air flotation process to the manufacture of cocoa powder some twenty years ago. Many exaggerated claims were made for it. In those days the popular powders were those with a higher butterfat content. They were made from high grade flavor beans such as Arribas, Caracas, Trinidads, etc. A high percentage of fat was considered necessary, and it was, to the



The ability of the "wind sifted" powders to stay in suspension longer was the basis for many of the new uses to which cocoa powders have been put during the past few years.



Stages in the development of the modern wind-sifter, originally the outgrowth of the Cyclone dust collector: Illustration at left shows how centrifugal action plus diminished carrying power through expansion cause coarse powder to drop. However, fine powder did not drop but passed over with the escaping air. An attempt was next made to utilize this discovery. Pulverized cake, fed into the machine from the top, is thrown into an upward current of air created by a system of internal fans. The draft from these fans can be regulated to pick up particles of any predetermined size, the coarser material being returned for regrinding. The ladened air passes into a separating compartment. Gravity and centrifugal action cause the powder to fall and the air to recirculate. The process is simple in principle and simple to operate.

extent that they were used to it. Under such conditions, any powder (irrespective of its basic blend) which contained less than 20 per cent cocoa butter, would have required more than average selling methods to sell it. The average butterfat content was at that time 25 per cent or over, mostly over. The selling resistance would, of course, have been still further increased if the beans used in the manufacture of the low-fat powder were of the cheap, flavorless variety.

Case Overstated

But the selling campaign in which cocoas of the new wind-sifting process were introduced was of a type to break down any kind of resistance. Many and extravagant were the claims as to its food value, its economy, its keeping qualities—in fact, any quality which could with the slightest excuse be used to hang a superlative upon. The news was spread by an intensive advertising campaign accompanied by lavish free sampling. Every food expert and strong man who could be hired was made to echo the song. It was a regular, honest-to-goodness knock-out, only—it failed to register. First sales were enormous, but the subsequent demand slowly petered out and, with the opening of the World War, died out almost altogether.

Only the echoes of the boom reached this country. They were the preliminaries of the push which was to follow the capture of Europe. About all we really got here was a hazy idea of the process and the product resulting from it, and both bits of information highly colored. Here began the tradition.

Refinement of the methods of cocoa manufacture got very little attention during the war years, notwithstanding an enormous increase in capacity. The period immediately after the war saw the country flooded with surplus war stocks—all of poor quality, and the products of a senseless competition. The overstocked condition of the market, and the poor quality resulting from the general shortage of money for plant improvements, forced manufacturers to put real effort behind the improvement of low fat powder when conditions did finally take a turn for the better. The demand for cocoa butter was increasing as the demand for powder decreased.

Germany Enters American Market

During these years the Germans made a serious effort to gain a foothold in this country for their finely separated powders. The price was too high to attract much attention even though its introduction was accompanied by much the same sort of wild statement as had heralded its initial appearance in Europe. Their campaign did much, however, to guide hesitant American manufacturers in the direction they should go. The value of such a process to makers of cheap powders was quickly realized. It was seen that such powders would open up new markets. Many valuable outlets were closed because of the gritty nature of what were then considered fine cocoas, and it had already been discovered that a number of new food products could be developed with the use of low-fat powders which were impossible when the butter content was high. The final solution of this problem has done much to keep the price of cocoa butter at a reasonable level, as a fair proportion of the costs are now carried by the powder.

As is usual with a new process, everyone tried a hand at it whether he knew anything about it or not, the result being, of course, that many half-baked notions were evolved and much money and time wasted. Many foolish machines were built; in fact, so few really good ideas came out of the melangé that many manufacturers gave the

problem up as hopeless. Fortunately, some few stuck at it, with the result that, after many miscues, they now have a fairly reliable method at their commond.

Some of the earlier methods, and they are still being used to some extent both in this country and in Europe, employed air to force the powder through screens. This was palpably an attempt to improve the old method and naturally fell down on account of screen trouble. A fine screen quickly became plugged so that even a gale could not force anything through it. Another method passed the pulverized cake, in small quantities, into a comparatively large room through which a slow current of air was moving. The air picked up the finer powder from the bulk and carried it over into a collector. The process was continuous and was to a limited degree successful. It produced some wonderful powders, powders as impalpable as some of the chemical precipitates. The quantities carried over by the air were so small, however, that the method was impractical on account of cost, except for experimental purposes. The principle was sound and is used with some changes in the present machines.

The Cyclone Dust Collector

A subsequent development employing the same principle was an attempt to use the familiar Cyclone dust collector. The Cyclone was primarily intended to clean dirty air. It was noticed, however, that when it was slightly overloaded, a quantity of fine dust remained in the air and was carried over with it, so an attempt was made to utilize this condition. A mixture of pulverized cake and air was fed into the first of a series of Cyclones. The first separated out a portion of the heavier particles; the next carried the separation a little farther, and so on until the product was fine enough, when the last machine completely cleaned the air. There are two distinct actions at work in the Cyclone. The first is the loss of carrying power which occurs when the air is suddenly expanded in the Cyclone; the other is the centrifugal force created by the whirling motion imparted to the air by the peculiar construction of its sides. Both tend to deposit the solids carried by the air, but are extremely hard to regulate, a slight change in the proportion of the various sizes

External view of the Gay Separator.

of cocoa particles being sufficient to throw the whole scheme out of kilter. Furthermore, this method required a tremendous amount of floor space, the only favorable factor being that it was not costly to run.

The most recent and more successful machines are those of the circulating-gravity type. Several forms of these are now in use, one of which has incorporated in it a very ingenious application of the force of gravity.

They are compact, self-contained, easy and inexpensive to run and have a very sensitive and quick method of adjustment. These machines have much the same appearance as the Cyclone, but beyond the fact that the same natural forces are applied, the simplicity ends there since the air does not pass through the machine in a continuous stream, but is made to recirculate.

New Device Is Simplicity Itself

The disintegrated material, upon being fed into the machine, is thrown into an upward current of air. This draft is created by a fan within the machine itself, and can be regulated to pick up any predetermined size of powder from the mass, the balance passing out at the bottom for regrinding. The ladened air if lifted by the fan and passed through a compartment where the separation takes place, the powder falling and the air being recirculated. Both the machines and the process are in actual fact just as simple as this description, the wonder being that they took so long to develop. Nor are they as cumbersome as is generally supposed. They are quite compact, certainly more so than the old method. Small models require headroom of some 15 feet, but as they are only 5 feet in diameter they can be tucked away in a corner somewhere out of the way.

The mesh sizes obtainable through the use of these machines range from 60 to 300. So finely can these sizes be adjusted and so stable is the adjustment that fed a cake of even approximately the same degree of pulverization, the product shows practically no variation over a long period of time. It stands to reason that the finer the powder to be produced, the finer the cake must be crushed and, to some extent, the lower is the yield. Much of the wind-sifted powder sold today lacks the outstanding fineness of texture which the process ought to give because the makers have been careless in grinding the cake and have attempted to push the machines beyond their normal capacities.

The average mesh size of the powders now being made by this method is 100 or less for the fatty types, and 100 to 200 for the drier or low-fat powders. Very few cocoa manufacturers consistently maintain the 200 mark, since the added return from so fine a cocoa is not commensurate with the higher cost of separating and regrinding. The 300-mesh powder represents so small a percentage of the material originally fed to the machine that it is usually held up only as a demonstration of what the machine will accomplish if required.

Fineness of Particles Restricted

The limits of fineness attainable in the powdering of a cocoa are dependent upon the method used to crush the cake, and influenced to a great extent by the manner in which the powder is to be repressed after the original grind. Repressing results from the melting of the butter under the heat developed in grinding, also from the natural tendency of finely ground particles to bunch together. The average fineness of the commercial cocoas has risen tremendously during the past year, but the results obtainable on the same apparatus with other products of an entirely dry nature, such as sugar, will never be possible with cocoa.

Wind-sifting, even with modern machines, does not take away all

(*Continued on page* 61)

Evolution of Chocolate C

Compiled by FRANCO

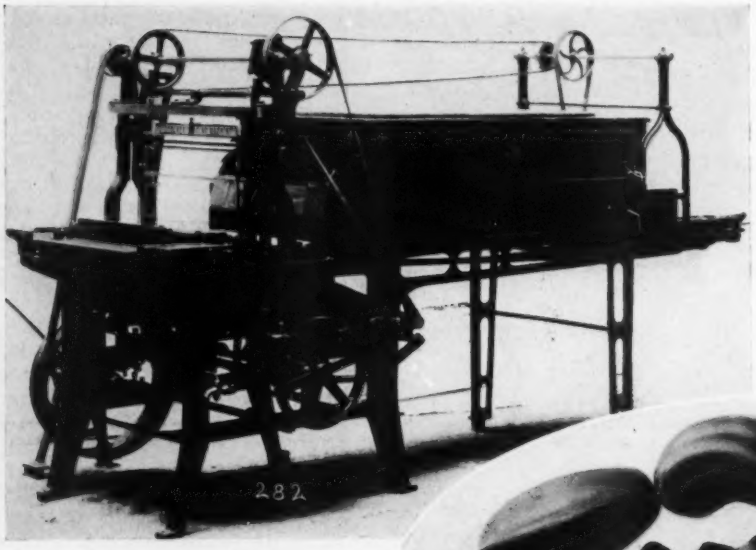
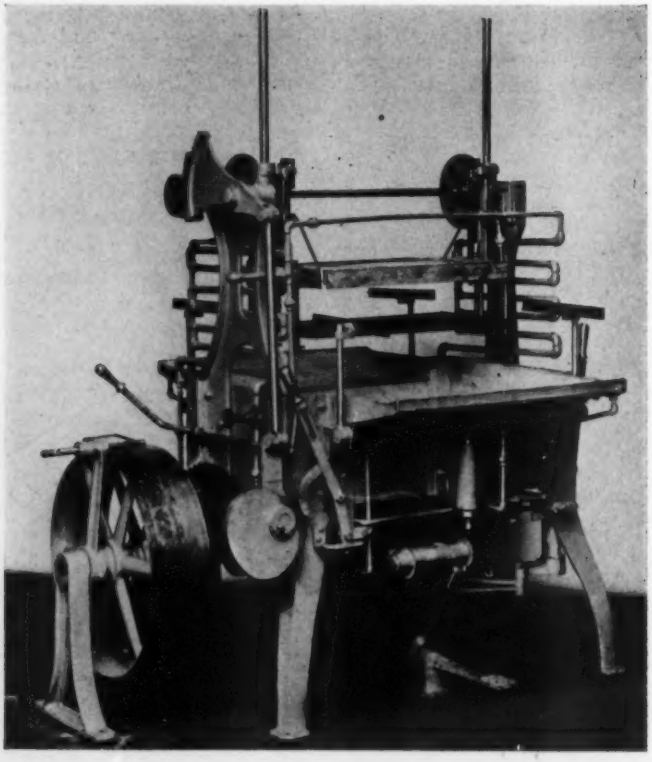


Fig. 1 (above)—Earliest practical coater—the grid type by Holmes (1890-95).

Fig. 2 (right)—Products of the Holmes Machine.

Fig. 3 (below)—First of the basket coaters (Werner, about 1895). Basket type coaters of improved design are used in the biscuit industry to this day.



THE first practical chocolate coating machine of which the writer has knowledge was that invented by Daniel M. Holmes of New York.

Figure 1 shows how the centers were stored in a tray at one end of the machine. An operator sat at this end of the machine and fitted the centers into indentations in a sliding frame which pushed them forward onto a wire grid. Here a holding device descended upon them and held them firmly while the whole grid went down into a bath of chocolate. When it emerged from the bath a tapping action took place and a second moving bar pushed the coated goods forward onto a roll of paper which traveled under an ice-box. A current of cold air was arranged by means of a fan. The coated goods passed forward along a packing web from which they were put into the boxes. Samples of the goods produced by this machine are seen in Figure 2.

The Holmes machine proved to be a success and the business of making cheap covered goods may be said to date from its introduction.

...on of the ...te Coater . . .

...ed by FRANCOIS DE MARLAND

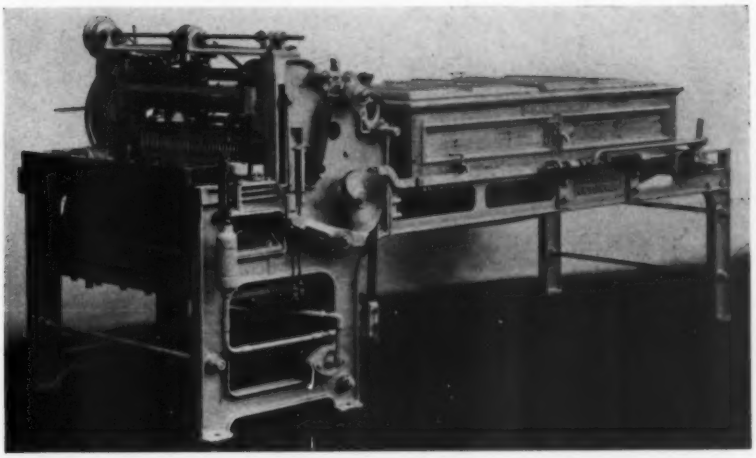
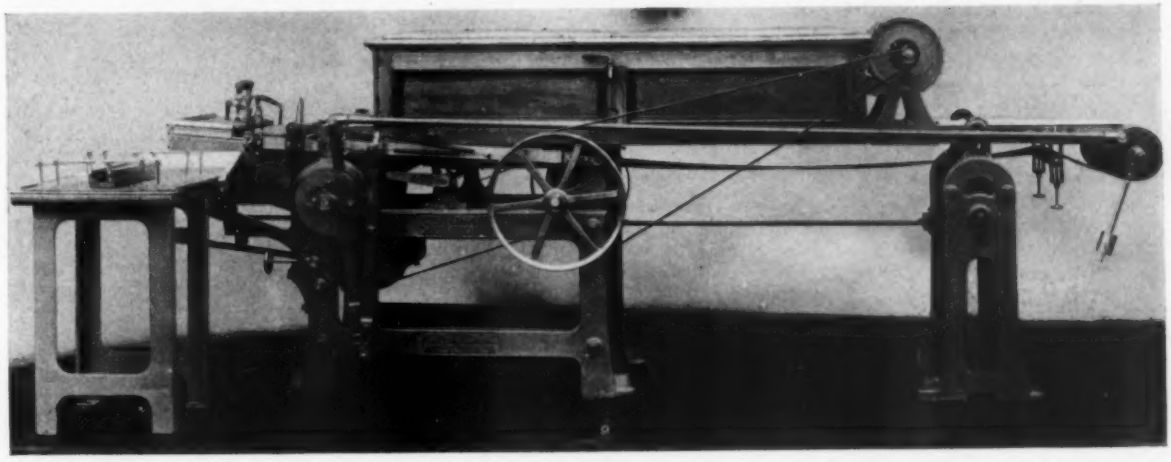


Fig. 4 (below)—The Climax Coater (1898) followed the grid principle of Holmes.

Fig. 5 (right)—The Baker Coater—Holmes' improved model (1898). Enter the "mechanical decorator."

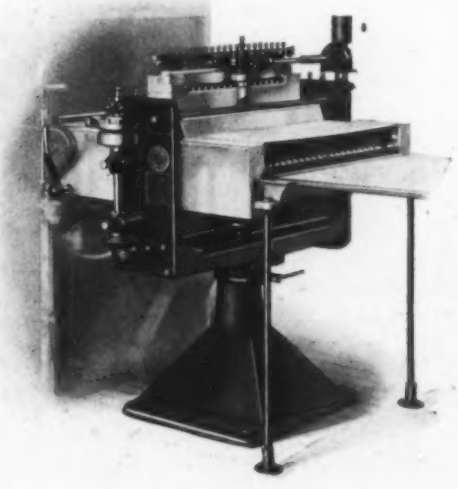


One English firm alone used 150 of these coaters.

The Basket Coater

While Holmes was working on his machine, other inventors in the United States were tackling the problem of coating in a different way. An example of this second type of machine is shown in the illustration of the Werner coater which dates back to about 1895 (Figure 3). With this machine, the goods were first set out in wire baskets. Then the whole basket-load was dipped in a tank of chocolate. A tapping motion was applied to the basket as it came up from the tank. The whole basket-load was then turned upside down onto a board covered with a sheet of paper. This released the goods in an upright position and they were taken away to cooling chambers. The advantage claimed for this machine was that the imprint of the wires of the

Fig. 6 (below)—A modern outgrowth of the mechanical decorator—the Kihlgren System of automatic stringing.



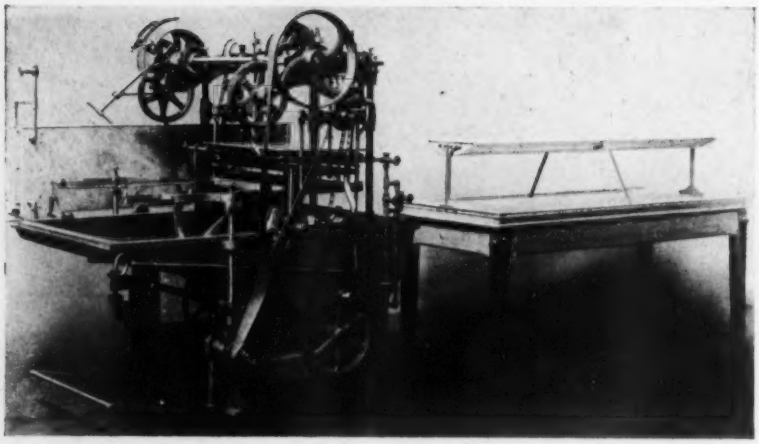
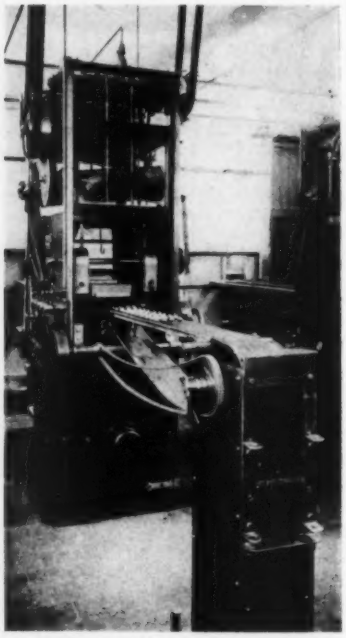


Fig. 7 (left)—The Champion, a basket coater by Baker Perkins (1900).

Fig. 8 (below)—Magniez' "curtain of chocolate" ends the war between grid and basket type coaters. The first "Enrober" (about 1900).



basket was left upon the goods, giving them somewhat the appearance of hand-decorated chocolates.

However, for a number of years the Holmes type of machine led the field and attracted the attention of copyists. The best known of these at the time was one which was introduced about 1898, known as the "Climax." Originally the invention of a German named Frings, it was later taken over by Joseph Baker & Son and certain parts of the Holmes mechanism added to it so that it finally took on the appearance shown in Figure 4. It differed from the Holmes machine in the method by which the goods were brought into the bath of chocolate but otherwise it followed the general lines of the Holmes machine fairly closely.

The Mechanical Decorator

Holmes himself had not been idle since the introduction of his first machine. In 1898 he introduced to the English market a machine which became known as the Baker coater (Figure 5). It adhered to the Holmes method but there was added to it an exceedingly ingenious and elaborate apparatus for imitating hand decoration. To obtain this, a secondary supply of chocolate was passed through hollow pencils which moved according to the pattern set for them by a pantograph attachment at the side of the machine. Thus scrolls or circles and other intricate designs could be placed on the surface of the covered goods. A large number of these machines were sold, but the drawback lay in their limited output. The single file of centers passing through the coater not only had to be dipped, but after being dipped, had to wait in position on the grid while the decorating pencils slowly performed their work.

The advantage of putting an attractive decoration on coated centers automatically by machine, was early apparent and the Kihlgren System (Figure 6) with its attendant autoline belt was developed. Together with the coater this made a complete machine for continuous coating and decorating. This machine enables the operator to string with a variety of designs and will produce to the full capacity of the coater.

The battle between the gird type of machine and the basket type was carried a step further by the introduction about 1900, of the Champion Coating Machine (Figure 7), developed by Baker Perkins Company. This machine marked a considerable advance over previous basket machines and was almost immediately taken up by makers of chocolate covered biscuits. It offered particular advantages for this class of work.

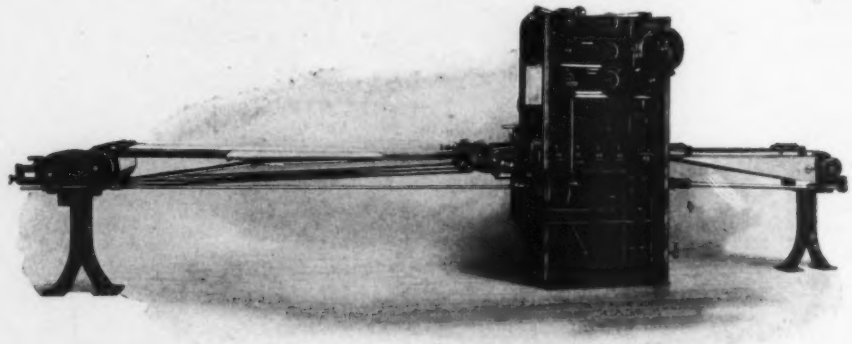


Fig. 9—The Enrober as redesigned by the late Frank H. Page for use in America (1901).

Magniez Invents the "Enrober"

But the whole procedure of coating centers with chocolate was destined to be revolutionized by the invention of Magniez, to become universally known as the "Enrober" (Figure 8). The chief feature of Magniez' machine was the provision of a flood of chocolate, or perhaps one could better call it a "curtain" of chocolate, through which the centers were made to pass continuously. Yet even with this great advance, the illustration of this machine shows how crude a piece of mechanism it was compared with the coaters which we know today.

Magniez' invention was exploited by Major Savy of Savy Jeanjean & Company of Paris. Nevertheless, the real development of the enrober began when it was redesigned in 1901 by Frank H. Page of the Confectioners' Machinery & Manufacturing Company (now National Equipment Company). This was the first enrober built in America (Figure 9). It was a machine which embodied many of the first enrober principles but was still far from complete. The coating belt was widened, an extension added and a few other refinements incorporated.

Later, in 1901, a fan for removing surplus coating was added, and in 1903 an elevating ring took the place of a canvas belt used in elevating chocolate to the flow pan, and a wire belt, quite as now used, was installed. The plaque delivery system with hooks in the plaque eyelets, was also a 1903 addition.

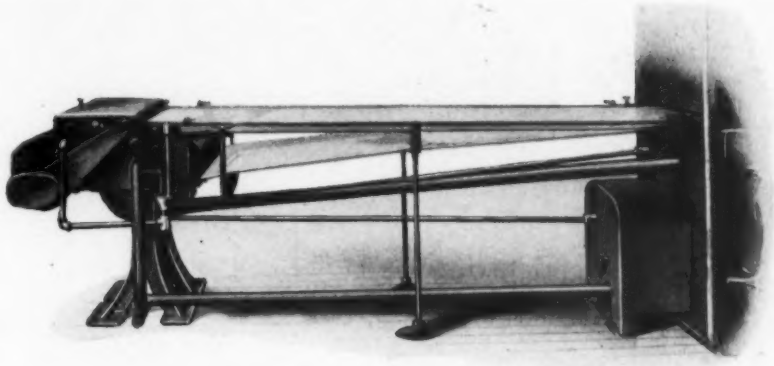


Fig. 10—The Bottoming Attachment came in 1904.

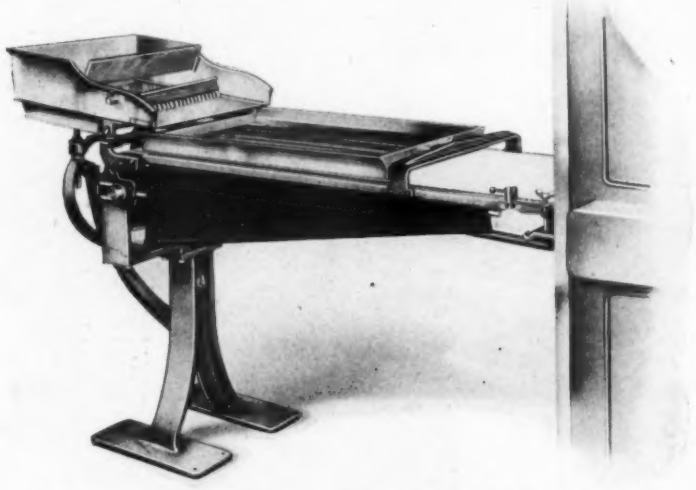


Fig. 11—The Automatic Feeder, another refinement of 1904.

Bottoming Attachment Developed

The year 1904 saw the development of the bottoming attachment (Figure 10) and the automatic feeder (Figure 11), both of which added materially to the usefulness of the machine and improved the quality of the product.

It later became evident that wider enrobers might be necessary so a special elevator was developed to make this widening possible.

Double bottoming rolls were put on in 1907, assuring still better bottoms to the goods.

The eyeletted plaques being somewhat expensive and a trifle awkward, were eliminated in 1909 by a new plaque delivery system, and in 1911 a new type of elevator for the chocolate was made in the now well known pump design.

1917 saw gear drives displace the

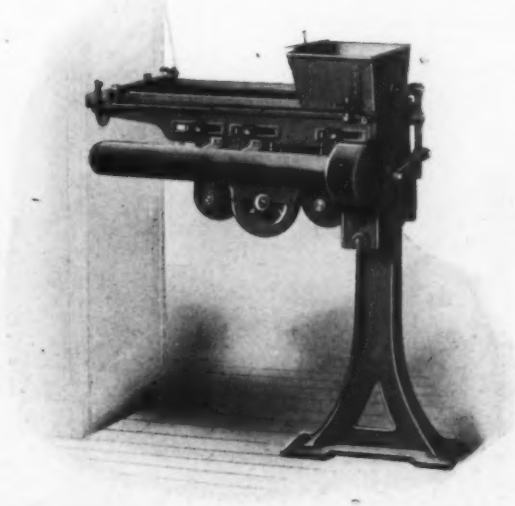


Fig. 12—A Nut Feeder was not perfected until 1919.

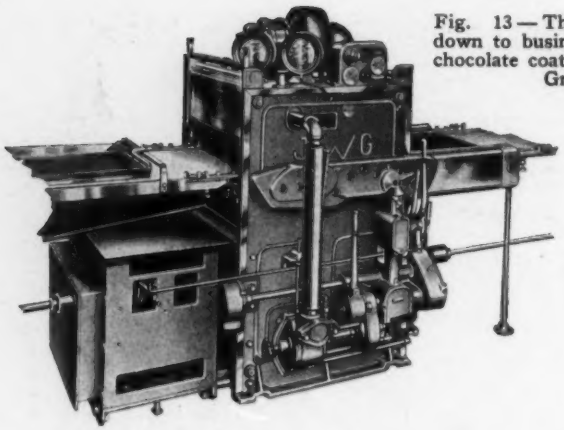


Fig. 13 — The coater gets down to business. A modern chocolate coating machine by Greer.

cone pulley arrangement. In 1918 the detailing device for removing the unsightly tails from candies as they passed from the wire belt to the plaque delivery, was placed on the enrober, now become a twenty-four inch machine in standard width.

A nut feeder (Figure 12) was developed in 1919 and in 1924 the thirty-two inch enrober was brought out for the biscuit trade.

1925 saw the redesign of the supply tank in the base of the machine, thus providing what was substantially a chocolate kettle with a constant supply of chocolate. With this improvement came the elimination of air in the coating, and a much more efficient mixing. The flow pan was further improved by the addition of a slot cleaner.

In 1926 the temperature control was developed. This device made it possible to supply the required amount of coating to the flow pan, and thence to the centers to be coated, at a predetermined temperature, and the constant maintenance of that temperature during the operation of the enrober. Greater accuracy and uniformity of the amount of coating on the centers and the continuous operation of the coating machine was now assured.

But the development of the enrober is still going on. New features and attachments are constantly being developed and tried out.

Enrobers and variations and modifications of them are used for many purposes. Biscuits are coated on them, as well as nearly all kinds of candies. Eskimo Pies are made by the million on them. Cakes are iced, and bonbons made on a modified coater.

Research continues and new uses in candy plants and elsewhere will be found from time to time, but the enrober was the first efficient coating machine as distinguished from a basket dipping machine. This development was largely the result of the work of the late Frank H. Page.

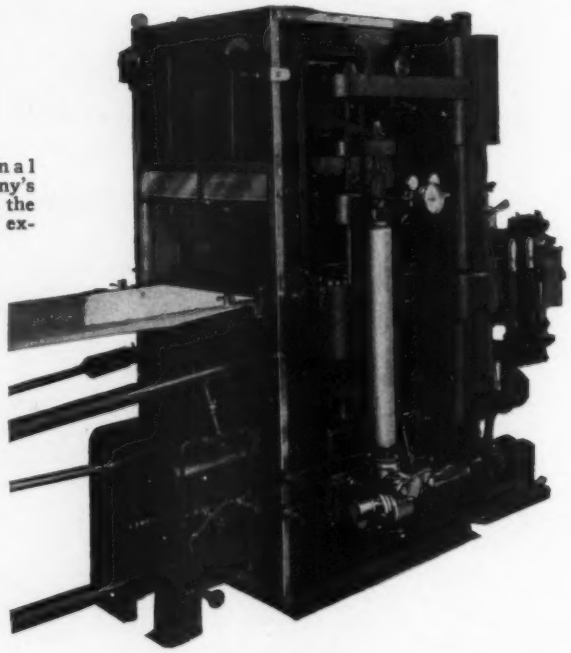


Fig. 14 — National Equipment Company's 1930 Enrober shows the refinements of an exacting age.

Fig. 15—The new International in ensemble. A highly competent looking piece of mechanism by Baker Perkins.

Magniez' idea of the curtain of chocolate was so basic that when his first patent expired, the curtain idea was immediately adopted by practically all designers of coating machines. While there would be no particular point to giving illustrations of the succession of machines which have copied this basic thought, it is interesting to compare the earliest conception of Magniez' enrober with the marvels of mechanical and scientific efficiency which are available to the confectioner today.

Illipé Butter *as a* Cocoa Butter Substitute

By EDWARD BENYON

THE search conducted for a substitute for cocoa butter which cannot be dectected from the real thing goes on as feverishly and as briskly as ever. Every so often the perfect substitute is discovered—but, as usual, the discovery turns out to be an old favorite, Illipé fat or one of its close relatives.

A recent substitute offered around the trade is a mixture of true cocoa butter and Illipé. The claim is made that even the most exacting analytical tests cannot detect the substitute, the inference being that the user can take a chance and use it as cocoa butter with impunity. As a matter of fact (if anybody really cares for facts) this statement would not be true even if the Illipé used were the true Illipé or Borneo tallow and its proportion in the mixture small.

Borneo tallow has practically the same composition as cocoa butter; or so nearly so that the average analyst, making the casual routine test, would pass it for ordinary cocoa butter. That much is true. But the more careful analysts, particularly those at Washington who are constantly on the watch for a revival of the old dodge, will be on the lookout for this adulterant. They happen to have several tests whicb are quite accurate. These tests take ad vantage of certain differences in the solidi fying point particularly.

Chemical Tests Which Show Up Illipé

The most successful tests are English as Illipé is extensively used in that country. The Halphen test as modified by Bolton and Reeves has been in use for a number of years and where the mixture consists of cocoa butter and Illipé only, this test is accurate. A later method used by Bywater Maggs and Bolton, and used extensively, takes advantage of the fact that Illipé sets very much more slowly than cocoa butter, nearly 10 degrees being the difference, which is why a true Illipé mixture gives so much trouble in dipping. These tests, coupled with the fact that commercial Illipé contains a large percentage of free stearic

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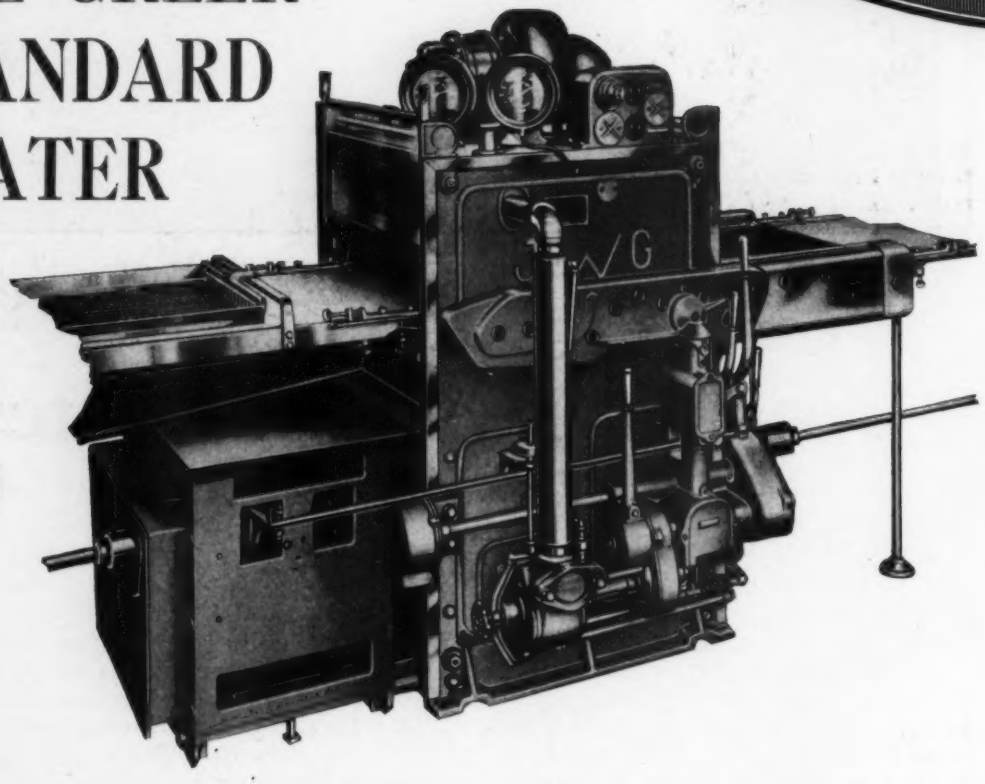

There are doubtless many ways of increasing profits yet one of the most obvious ways is usually very reluctantly used—the replacement of obsolete machinery with the latest and most efficient available.

The manufacturer who can produce the best coated goods with the least Labor, Material and Waste is going to win out in the long run.

Are you operating your Coating department under a handicap? If it is not equipped with Greer Coaters you are! The Greer Coater is noted the world over for its accurate and uniform coating, its large output of high quality goods, its remarkable freedom from mechanical troubles—hence small upkeep,—and its ease of operation.

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acids make the hiding of this substitute difficult if it is being sought. There is no question, however, but that its detection is exceedingly unlikely if it is mixed with some of the vegetable stearines or hydrogenated fats, but as these other substitutes are in turn readily detectable this method of masking Illipé is valueless.

Even if Boreno tallow were all that is claimed for it and even if the majority of chemists were to be unable to detect it, how is the buyer to know that the Illipé butter he is buying is the true Illipé and not one of the many other inferior exotic fats which also bear that name in the East. There are several types of Bassia tallow from India which are also termed India Illipé. They are to some extent similar to cocoa butter but have outstanding characteristics which are easily detected. They are all frequently used to adulterate true Illipé.

Adulterating Adulterants

There are other exotic fats besides the above in the near cocoa butter group which are also used with Illipé. A few of these are Chinese tallow, Malabar tallow and the stearines (hard fats) extracted from Shea butter, Palm oil, etc. All of these are similar to both cocoa butter and Illipé but are also easily detected.

This adulterating of an adulterant is somewhat farcical but nevertheless widely practiced. True Illipé, or Borneo tallow, is relatively scarce, the supply being too small for the English demand alone. Also, they get first call on it as it is all refined in England. Borneo tallow is the fat extracted from the nuts of the Stores Stenoptera and some of its sub-species. The trees are not plantation grown but are scattered sparsely through the jungles of Borneo, Sumatra and Java. On account of the scattered nature of the growth the harvesting is spasmodic and the supply irregular. It is these conditions which account for its scarcity and frequent adulteration.

The extensive use which is made of substitutes in Europe is a point which the exporter of chocolate candy should always keep in mind. European pure food laws are not nearly so stringent as ours and before the war were practically non-existent. None of them forbid the use of cocoa butter substitute in chocolate. It stands to reason, therefore, that the American manufacturer stands very little chance of competing with any except the highest grades of foreign chocolate unless he has definite knowledge of this fact and is prepared to give his foreign clients something manufactured according to their own standards.

Illipé Gives Waxy Character to Coating

There is another aspect of the matter which must be given due consideration. The structure of Illipé fat is simpler than that of cocoa butter, the glycericides of fatty acids of which it is composed being of the higher molecular type with a higher melting point and a much higher breaking down point. This characteristic in a mixture containing a fair amount of Illipé will give chocolate the same repulsive qualities as a hard hydrogenated fat, a waxy character which will entirely spoil the eating quality of the candy on which it is used.

In my judgment, any attempt to dodge the use of coca butter by the substitution of so-called Illipé fats is "playing with fire" for even if they pass inspection, the product is as surely labeled as containing substitutes as by printed announcement of the fact. True Illipé will give a product artificially hard, with good keeping qualities but repulsive; mixed Illipés are charged with all the ills a low grade fat is heir to—low melting point, troublesome dipping characteristics, and an early and particularly pungent rancidity.

Now, that's a question —

Every month the Editor asks ten questions which every intelligent candy man should know. How do YOU rate on these questions?

1. What is meant by the "Candy Distribution Survey" and what is its significance to the Candy Industry?
2. Three candy manufacturers have been chosen as representative of the type of firm disposing of its products mostly through jobbers—to have their books analyzed in connection with the Survey. Who are they?
3. Where and when is the next International Congress of Manufacturers of Chocolate and Cocoa to be held?
4. Who invented the first practical chocolate coating machine?
5. What is meant by the "Kihlgren System"?
6. What large manufacturing and distributing company employs the novel method of promoting sales, of sending out a motor truck caravan equipped as a school to educate the foremen and superintendents of the major industry which they contact?
7. What industry still makes extensive use of the basket coater?
8. What adulterant of cocoa butter has met the fate of being grossly adulterated itself?
9. What added complication does the presence of milk introduce into a coating?
10. What is overheating likely to do to a chocolate coating?

(The answers to the above questions will be found on Page 61 of this issue.)

Answers to December Questions

1. *What is "fondant chocolate?"*

Ans. A chocolate finely milled and subjected to heat treatment to produce partial caramelization.

2. *What range of temperatures has the government carbohydrate laboratory established as safe for the storage of chocolate and chocolate-coated goods?*

Ans. From 22° F. to about 65° F.

3. *What special precaution must be observed with respect to withdrawing stored chocolate goods from storage?*

Ans. Gradual acclimatization of the goods to the temperature of the outside atmosphere.

4. *What is the normal moisture content of fondant?*

Ans. 10 to 15 per cent.

5. *What gives candy the appearance known as "smallpox" or "measles"?*

Ans. Evaporation and recondensation of the moisture of candies packed in airtight containers. The "sweat," as it is called, dissolves some of the sugar of the candy to form a syrup. The syrup soaks slowly into the piece, dissolving off the surface any air holes which exist in the cast piece. Little reservoirs of syrup are thus formed where the airhole previously existed and the syrup soaks on into the goods, leaching out color as it goes.

6. *Why is it recommended that surplus fruits be more generously used in the manufacture of candy?*

Ans. To counteract the "dead sweetness" of "all sugar" candies, and to render them less filling.

7. *How much moisture should properly cured moulding starch be called upon to absorb?*

Ans. Not over 2 per cent, based on total starch weight.

8. *Name eight colloids which are now widely used in the manufacture of candy.*

Ans. Starch, the dextrin in corn syrup, gelatine, the casein in milk products, gum arabic, agar-agar, fruit pectin, lecithin.

9. *What product of the South Sea Islands has recently been introduced into the states as a substitute to cocoa butter?*

Ans. Borneo tallow, or Illipé butter.

10. *Who originated the slogan "The Candy Industry is on the Threshold of a Great Revival"?*

Ans. W. C. Dickmeyer.

Prostituting Chocolate Quality *for* Volume Production

XII ("Chats on Chocolate")

By ROBERT WHYMPER

(Author of "Cocoa and Chocolate" and International Chocolate Authority; writing exclusively in The Manufacturing Confectioner)

THE preaching of quality is a thankless task. The only adverse criticisms, however, that I have received with regard to my articles appearing in the M. C. concern the "meat" that they contain. I learn on inquiry that the "meat" that I have omitted comprises formulae, specified machines, and the pet processes of different manufacturers, stewed in the juice that each article has only a limited appeal, one article of interest to the chocolate manufacturer only, another only to a manufacturing confectioner. If this indigestible mélange of meats is what the readers require, it is simple for the editor to find authors to supply it, for there are plenty of former employes of famous firms, machine advertisers, and merchants of formulae, who would be only too delighted to give the information. But it has been my deliberate intention to avoid all the usual technical goulash and to steer clear of the old dope that can be found in books, periodicals and advertising pages, and to provide one thought only in each article upon which persons interested in chocolate can chew. Mastication and digestion are facilitated by this simple diet.

Soak It to Them, Robert!

To me, the main point to drive home is that many chocolate manufacturers have wandered too far along the wrong path and that it is full time that they came to realize the danger of the situation, especially so far as it affects the growing of better cacaos. And I intend, unless forced into silence, to continue my tirade against any movement that threatens the industry, in spite of the fact that it is the many chocolate manufacturers themselves, to whom I am writing, who are largely responsible for the poor, cheap rubbish so

commonly found on the market today. But the manufacturers are not the only people to blame.

Not long ago there appeared an article in the "*Century*" which demonstrated to the satisfaction of its author, at any rate, that Science had lamentably failed to confer sufficient benefits upon mankind to justify calling the present era the "Age of Science." No adverse criticism could, of course, be made against the material comforts, or aids to business, that Science had brought about, but, quite rightly, the author of the article pointed out that, spiritually, the cult of Science had been a dead failure, and the World War was quoted as a striking example of what Science *did,* materially and destructively, against what it *might* have done, ethically and constructively, if it had had a proper spiritual foundation.

Science's Cloven Hoof

In business also, Science has shown signs of a cloven hoof, and it is not, I think, without cause that the so-called technical chemist is looked down upon as a rather inferior sort of person, whatever his value in dollars or pounds may be to a manufacturing firm. I do, however, resent that the scientist who calls himself "pure" should be among those doing the looking down, just because he regards the technical man as a bastard of the same father. The so-called "pure" scientist has, to all intents and purposes, ceased to exist since the flower of chivalry exchanged horses for motor cars and lances for automatics.

The depravity of Science is best seen in the unholy rush to commercialize a discovery, which is seldom the inventor's own unaided inspiration. Commercially, the scientist would be a fool not to do for himself and his own advantage what someone else would do in time by greater theft, but, once a scientist becomes commercially-minded, he ceases to be the great factor for good that his education and training should have made of him. On the other hand, all chemists engaged in technical work must not be lumped under the one heading, "commercially-minded," just because they happen to be in commerce, for I believe that the problems met by the technical chemist could, if solved correctly, be the means of raising the ethical (if not spiritual) as well as the material standards of mankind.

Research Via the Cash Register

The trouble is that the technical chemist is so often asked to find a cheap substitute for this or that costly ingredient, or to imitate in cheaper form a product so that it is "just as good" by purer mathematical scientists whose business it is to keep unsentimental track of their own and competitors' sales and to record the minutest detail in the cost of the product being manufactured, and who live in so dense an atmosphere that such a thing as quality cannot thrive.

A technical chemist of the best kind is not disturbed by visions of greater prosperity acquired at the cost of quality. A thing must *really* be just as good, or he should not be satisfied; and, if he is a wise, as well as a good, technical chemist, he will keep his findings to himself until he is completely satisfied with his new product.

The man who claimed to have made a silk purse out of a sow's ear to show that it could be done had, we must believe, an eye on the packing houses to whom he hoped to sell his process, or else it was publicity that inspired him to the folly.

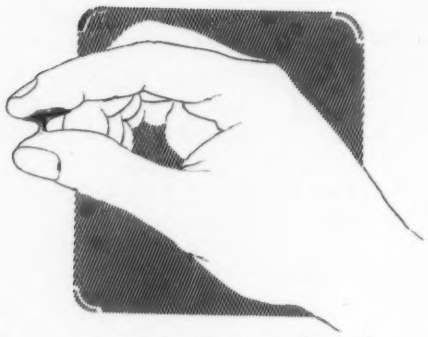
It is a simple matter to make a purse as good as a silk one, or better, out of a sow's ear, and it is not beyond all imagination to conceive of a special breed of sows that in their spare time would spin a fibre like silk from their own ears. But in the one case it would not be a silk purse, and, in the second, it would not be the silk that we know, that has been described in detail by the breeders of silk worms.

Quality Cacaos Foredoomed

In the chocolate business we have the same situation—there are good chocolates, chocolates just as good, near-chocolates, and imitation chocolates. Very shortly there will be no good chocolates to be had anywhere because technical chemists the world over, including agriculturists, economists, and factory chemists, who should know better, are prostituting themselves to the quantity producers. If my articles in the M. C. have been in any way intelligible, it must have been understood that, with the bulk of cacao at 10 cents per pound, the death of the better grades is only a matter of time. To grow cacao with

(*Continued on page 60*)

The Working Sample



A Sequel to "Balky Coatings"

By EUGENE B. EDWARDS

A PRECEDING article dealt with chocolate troubles due to the inherent characteristics of cocoa beans themselves, and did not touch on the added troubles which sometimes arise from the use of milk in chocolate. As a rule, this milk has a high acid content, which produces a further and quicker inversion of the cane sugar, and as the quantity of sugar in such formulas is generally large, the continued presence of moisture will produce a proportionately high quantity of invert.

Bargain Coatings No Bargain

The candy manufacturer will see from what I have said that bargain coatings, however good they may appear superficially, all contain possibilities as trouble makers. It is not yet within the power of the chocolate manufacturer to regulate the behavior of his product, consequently these possibilities will likely continue to be as numerous as they are varied. Much can be done to forestall trouble by buying from a reliable manufacturer, one who uses only sound, well-developed and well-fermented beans which have been properly dried.

Although it has been possible to speed up many of the operations of chocolate manufacture, and to eliminate many unnecessary ones, much time and effort must still be expended to produce a good chocolate coating.

In this time interval many of the defects likely to cause trouble show up before the chocolate is finished, giving the manufacturer an opportunity to correct them. Most candy manufacturers know that a high grade coating will work better and give practically no trouble as compared with a cheap one, and although most of the difference is due to the type of raw materials used, a great deal of it is due to the greater amount of time and work put into its manufacture.

One of the most important results of time and work in the manufacture of chocolate is the retaining of those colloidal substances naturally in the cocoa bean and the adding of new ones by grinding. These substances and their effects cannot be developed by the mere grinding of the paste and subsequent dilution with cocoa butter; they have to be thoroughly impregnated through the mass, a condition which can only be attained slowly and as a result of constant working. That is why a well-conched piece of chocolate has such a wonderful texture.

The Colloidal Condition

The colloidal condition is one which will hold certain of the solids in suspension. This phenomenon is quite common in nature and is duplicated by extremely fine grinding, there being at least one colloid successfully extracted from a vegetable product, which can be used in chocolate to fortify those already there.

It is some question whether the higher fats in cocoa butter possess colloidal properties or have in them fatty compounds of a solid nature to give them their characteristic viscosity and general resistance to grayness in hot weather.

How can a candy maker know if a coating is well made when buying from sample? First, by being sure that he is doing business with a reputable seller; and second, by refusing to settle the matter by price or by the mere chewing of a piece of the sample submitted. Always get a working sample, one large enough to test under actual operating conditions. It is true that trying samples in this way is somewhat of a nuisance, upsetting as it does the regular factory routine, but the assurance it gives is decidedly worth it.

No matter how thin it is, a well-made coating when melted down should have viscosity or "tackiness," varying, of

course, according to the amount of cocoa butter which it is supposed to contain. Under no circumstances should it run "as thin as water," as a coating of this type never completely covers the center, but produces a porous covering after it is hardened, permitting the evaporating and drying out of the center. The tacky, well-worked coating may not have the same butter content, but as it stretches (like a piece of rubber) it will cover the center, leaving no pores, and in the end gives as good, if not better, yield per pound.

Susceptibility to Moisture

If properly packed, such a well-worked coating has practically no moisture in it; on the other hand, since chocolate picks up moisture quickly (on account of its starchy compounds and invert sugars), this disturbing factor can readily get in through faulty packing, poor storage conditions, humid rooms, gas flames or leaky appliances.

Fine grinding is not always an indication of the value of chocolate, as grinding is only one part of the process of manufacture and any type of raw material can be ground finely at a comparatively low expense. Flavor and odor are better indices, provided they are accompanied by the results of time and work.

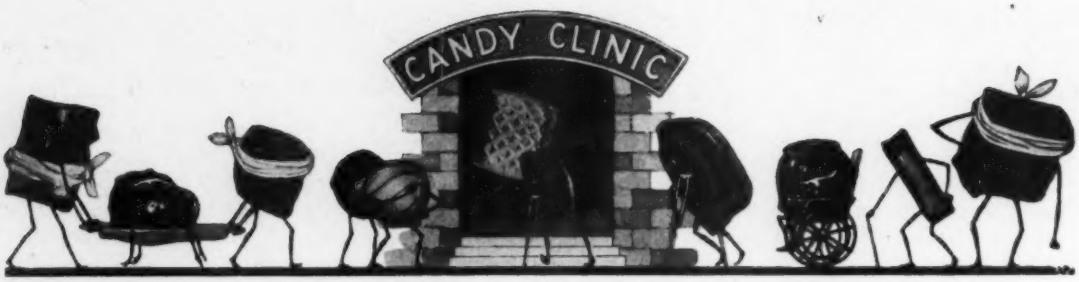
In choosing a coating, it is a common failing to mistake pungency for flavor. A sharp, pungent odor in a coating (provided it is of natural origin) will not blend with the center when it is eaten fresh, but evaporates quickly, leaving behind in the majority of cases the flavor and odor of decay. This flavor and odor are from the by-products resulting from the breaking down of unsaturated fatty compounds by oxidization or other chemical action. If the flavor be an added one and is sufficiently strong, it will in almost every instance develop further and kill the flavor of both chocolate and center. Flavor, whether natural or added, must be smooth and its strength built up in the bean blend. No matter how strong a flavor and aroma is desired, they must be pleasing, never harsh. And do not blame the coating if you kill a mild center by dipping it in strong coating.

Use of Plenty of Kettles

Not the least frequent cause of mushy coating is overheating, most chemical reactions being enormously speeded in the presence of high heat. Very frequently this is done in the candymaker's own factory. It is well to avoid heating the product any further above melting point than is absolutely necessary. Of course, this will mean more kettles, and one thing the candy manufacturer seems to hate is buying kettles, even though they are comparatively cheap and do not cost much to run. Kettles, plenty of them, run on low pressure steam, improve the chocolate by building up its colloidal properties and by gradually drying out any moisture which it may have absorbed since it left the chocolate factory. They are not cure-alls, however, since some of the defects in coatings are due, as has been pointed out, to changes in the structure of the ingredients and these cannot be readily eliminated. The best cure for this type of trouble is to send the coating back.

The segregation of chocolate melting from those rooms where there is much steam and the installing of suitable equipment in the dipping rooms to control the humidity will remove possibility of moisture entering the chocolate while it is being handled.

Good chocolate coating of any grade should be well moulded, which is to say, it should break with a clean, solid fracture right through. Badly moulded coating is an indication of carelessness. When crystallization has taken place, not only is much of the flavor lost through evaporation, but on account of granular character, the possible surface exposed to moisture and oxidization is tremendously increased with a natural speeding up of rancidity. Good chocolate should have a pleasing aroma and taste, no matter how high the liquor content may be. It should be handled carefully at all times and always protected from moisture.



The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Each month he picks up at random a number of samples of representative candies. This month it is holiday assortments; next month it will be solid chocolate bars and moulded goods. Each sample represents a bona-fide purchase in the retail market, so that any one of these samples may be yours.

This series of frank criticisms on well-known, branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of the M. C.

Holiday Assortments

Code 1A 30

Christmas Candy Cane—6 Pieces for 29c

(Purchased in a chain drug store in New York City.)

Appearance of Package: New, novel and seasonable. These canes were sold 6 in a bundle. Wrapped in white Cellophane. They made a very pleasing package.

Box: Folding type of box. Printed in red and green with picture of Santa Claus holding a candy cane on the top.

Appearance of Package on Opening: Canes were wrapped in wax paper. All six were in good condition; none were broken.

Cane:
- **Gloss:** Fair.
- **Flavor:** Peppermint. Good.
- **Stripes:** Red. Very poorly done.

Remarks: This package of canes was very reasonable at the price of 29c. It made a good Christmas candy package. However, the striping was poorly done. Had the workmanship in this particular been better, these canes would have been among the finest we have ever examined.

Code 1B 30

Holiday Chocolates—5 Pounds, $2.25

(Purchased in a retail store in New York City.)

Appearance of Package: Fair. There was nothing about this box to suggest the Holiday Season.

Box: Modernistic design on top, in blue, violet, gold, white and black. It was different from the usual type of Holiday package.

Appearance of Box on Opening: Good. All pieces were well packed and in place. Top layer had eight colored foil pieces and thirteen walnut topped pieces. Cups were used for all top layer pieces but not for the lower layers.

Centers:
- **Caramel:** Not good. Tasted as though scrap or a poor caramel paste had been used.
- **Peppermint Cream:** Fondant, good. Flavor, fair.
- **Pink Cream:** Flavor could not be tasted. Fondant was tough and short—a poor cream center.
- **Cocoanut Cream:** Flavor, good. Fondant, good.
- **Lemon Cream:** Fondant, tough and short. Flavor hardly discernible.
- **Peanut Nougat:** Entirely too hard. Ate like a hard taffy.
- **Maple Cream:** Flavor, good. Fondant, fair.
- **Walnut Top Vanilla Cream:** Good.

Assortment: Too small.

Remarks: For the price of $2.25 this package cannot be considered up to standard. The assortment was entirely too small, coatings were only washed on, in many cases exposing the centers, and the centers themselves in several cases require checking up.

Code 1C 30

Christmas Assorted Chocolates—5 Pounds, $1.39

(Purchased in a retail candy store in New York City.)

Appearance of Package: Seasonable and a nice looking box for this priced goods. Tied with red ribbonzine both ways. Light brown paper used for outside wrapper.

Box: Christmas motif printed in blue, green and red.

Appearance of Package on Opening: Very good. All pieces were in place and well packed. Three trays were used in the top layer, and two in the bottom. Top layer contained nine foiled pieces and six pieces with split almond tops.

Chocolate Coating: Sweet.
- **Color:** Good.
- **Gloss:** Good.
- **Taste:** Fair.
- **Strokes:** Fair.

Roman Punch Cream: Fondant, soft but tough. Flavor, fair.

Vanilla Cream: Flavor, good. Fondant, dry, tough and gritty.

Chocolate Nougat: Good.

Raspberry Jap Jelly: Good.

Orange Cream: Flavor, fair. Fondant, soft but tough.

Raspberry Cream: Flavor could hardly be tasted. Fondant was tough.

Vanilla Nougat: Good.

Lemon Cream: Flavor, fair. Fondant, dry and tough.

Pink Cocoanut Carmel: No flavor could be tasted. Cocoanut was too hard.

Butterscotch: Good.

Caramel: Texture, good. Flavor, fair.

Fudge Marshmallow: Good.

Vanilla Cocoanut: Good.

Almond Top Belmont: Good.

Assortment: Good for the money.

Remarks: Considering the price, $1.39 for five pounds, this is not a poor assortment.

Code 1D$_1$ 30

Holiday Chocolates—2½ Lbs., $1.50

(Purchased in a drug store in New York City.)

Are You Dissatisfied With Your Holiday Assortments?

—an occasional glance around you at what the other fellow is doing will broaden your perspective and help you to originate new ideas of your own.

—The Candy Clinic simplifies the task by searching the highways and byways of the candy mart for you. Alertness is the price of progress.

Appearance of Box: Attractive, carrying out the spirit of Christmas. Red ribbonzine used corner to corner.

Box: Extension top, printed in red, green and gold design, making a very presentable appearance.

Appearance of Box on Opening: Good. Well packed with foil wrapped pieces in top layer.

Chocolate Coating: Bittersweet.
Color: Too dark.
Gloss: Fair.
Taste: Fair.
Strokes: Fair.

Centers:
Molasses Chips: Good.
Cocoanut: Good.
Vanilla Nougat: Good.
Vanilla Marshmallow: Good.
Peppermint Cream: Good.
Maple Cream: Good.
Fudge: Good.
Vanilla Cream: Good.
Caramel: Fair.
Orange Cream: Fondant, good. Flavor tasted rancid.

Assortment: Fair.

Remarks: These chocolates at the rate of 60c the pound are passable. Suggest a few more chewey pieces be used. The assortment was too small. Also suggest a white glassine wrapper be used as box was soiled.

Code 1D₂ 30

Christmas Candies—2 Lbs., $1.00

(Purchased in a drug store in New York City.)

Appearance of Box: Pleasing and appropriate for the season.

Box: Red wrapper printed in green with white lettering. Red ribbonzine one way.

Appearance of Goods on Opening: Exceptionally good. This box contained small ribbon candy about ⅝" square. It was surprising to see how little of it was broken, as this is a very difficult piece of goods to pack and handle.

Colors: Very good.

Flavors: Good.

Gloss: Very good.

Assortment: Very good.

This candy was in perfect condition and the workmanship was exceptionally good.

Remarks: We are informed that this box of ribbon candy was an excellent seller. Ribbon candy is such an old confection, most of us have nearly forgotten about it. However, this particular assortment brings it back to mind so favorably we are hearty boosters of it as a Christmas confection. The box examined was bang-up in every respect, flavors were of the best and workmanship was exceptional.

Code 1E 30

Holiday Chocolates—5 Lbs., $1.39

(Purchased in a retail candy store in Brooklyn, N. Y.)

Appearance of Package: Fair. No outside wrapper was used.

Box: Christmas motif printed in gold, green and red.

Appearance of Goods on Opening: Very good. Printed white Cellophane layer on top. All pieces in place, well packed, with 5 foil wrapped pieces, five walnut topped pieces and 5 almond topped pieces on top.

Chocolate Coatings: Sweet.
Color: Good.
Gloss: Good.
Taste: Not very good.
Strokes: Good.

Centers:
Strawberry Cream: Flavor, poor. Fondant, tough.
Cocoanut Cream: Tasted as if scrap had been used.
Orange Creams: Fair. Fondant, gritty.
Vanilla Cream: Fair.
Pink Cream: Flavor had been used but could not distinguish what kind.
Caramel: Mostly all had become grained. Flavor, fair.
Jap Jelly: Either raspberry or strawberry, could not tell which.
Vanilla Nougat: Fair.
Peppermint Creams: Good.
Vanilla Walnut Top Cream: Fair.
Vanilla Almond Top Cream: Fair.

Assortment: Much too small.

Remarks: The flavors used could be materially improved. Of course the most expensive flavors could not be used in a box of chocolates at this price. Our criticism of it is that the box does not come up to the standard for this class of merchandise.

Code 1F 30

Mixed Hard Candies—2 Lbs., 49c

(Purchased in a chain drug store in Boston, Mass.)

Appearance of Box: Good.

Box: Red wrapper with holiday scene across center. Glassine wrapper used, seal on ends and red ribbonzine one way. Altogether a very attractive and appropriate box.

Appearance of Goods on Opening: Very good, well packed, with a heavy waxed liner and waxed paper pad.

Condition of Goods: Very good.

Mixture: About half pulled and half clear, no filled pieces.

Flavors: Fair. Some were imitation.
Colors: Good.
Gloss: Very good.
Size of pieces: Just about right.

Assortment: Cups, satin squares, cut rock strings, tid bits, drops, humbug cuts and dainties.

Workmanship: Good.

Dust: Hardly any.

Remarks: The only fault to be found was that a few of the flavors, while not bad, were not quite as good as they might have been in a hard candy at this price.

Eric Lehmann—

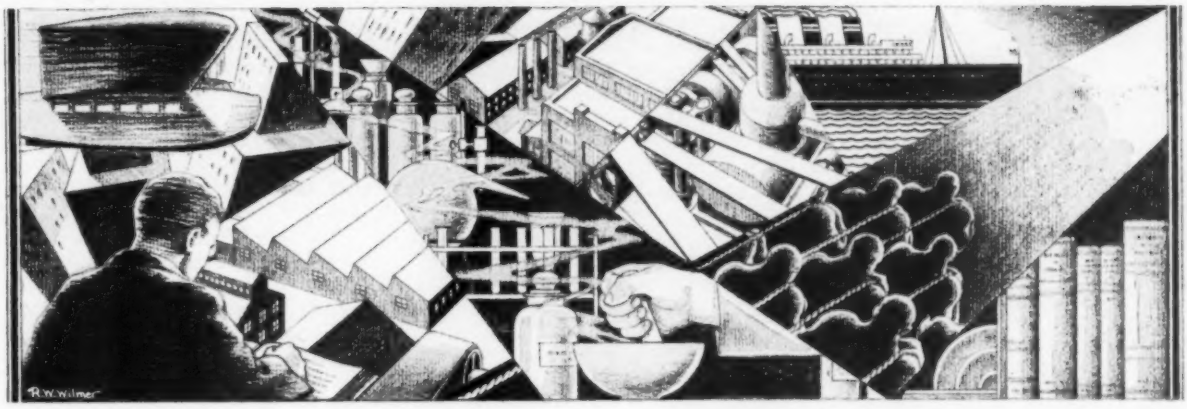
Speaking of Holiday Assortments

DURING the holiday season just passed, fewer of the large wholesale houses put up special five pound Christmas assortments in the $1.39 to $2.00 range than during the preceding year. This was most gratifying in view of the unsatisfactory experiences which resulted from their wholesale entry into this market last year.

Candy at this price must necessarily be of the cheaper sort—hardly a credit to the candy industry. Quality must be sacrificed for quantity. Such candy does not only the manufacturer but the entire industry a great deal of harm. Of course there will always be a certain amount of business to be done in lowgrade candies among people who are not discriminating, but the profit is so very, very small and the possible losses large that it is really a question of common sense and business economics whether it is a desirable field for any manufacturer to enter. It seems to me that it would be much more reasonable for these manufacturers to dress up their Christmas assortment a bit more, put a better grade of candy into them and charge more money. It has been my own experience that although the poundage may decrease, the monetary results are much more satisfactory in the end. People today are looking for good candy—candy that is really fit to put into their stomachs whose needs the medical and dietetic professions are teaching them to appreciate—furthermore, they are willing to pay well for anything which is to be put inside of them. All of our recent experiences in this direction show that the public will pay more for food delicacies than they did formerly and will take less in return for what they do spend, so long as the quality is there.

A few manufacturers are putting out boxes holding two to two-and-a-half pounds. It seems boxes of this size are plenty large enough for the average consumer and a price can be charged for them that makes it possible to get a better profit.

One of our largest wholesale houses, in the absence of a special Christmas package, put up an assortment of their regular line, which included jars of hard candy, assorted chocolates in one pound boxes and some specialty numbers put up in pocket size packages. Also included were various candies for the children—lollypops, chocolate tablets, etc.—all selected from their regular all-year round line of merchandise. The entire assortment was then put into a large box with a bright red Christmas wrapper. It was priced at $4.00 and made a very popular seller. It covered the wants of the entire family from the older folks right down to the kiddies. From a display standpoint, the package possessed unusual merit. Considering the total volume of business which it brought in, it left no question in the mind of this manufacturer as to the value of the idea of Christmas packaging. Considered from the standpoint of economy, there is no loss in left-over merchandise which must be sold after the holidays at a cut price, if at all. Instead, the individual numbers in this package can be taken out and placed back on the shelves or in the display cases as regular stock. If this offers a suggestion to the five-pounds-for-a-dollar men who are ruefully examining the red ink on the balance sheet about now and wondering how it happened that they sold so much candy and contrived to lose money doing it, why just put this page in the pack up file and trot it out again around the 15th of August or 1st of September, you don't have to make up a $4.00 collection. You can make one up for $1.50 or $2.00, if you wish.



Monthly Digest of CURRENT TECHNICAL LITERATURE

Processing and Packaging California Raisins Is Chiefly Automatic

By P. D. V. Manning. Food Industries, vol. 1, p. 316 (1929).

ONE of the most significant events in the American food industry in the last two decades is the phenomenal growth of California's raisin production. A few vines planted by the Spanish padres in the gardens of the missions have given rise to acreage producing 250,000 to 300,000 tons of raisins annually.

It is only within recent years that raisin manufacturing technique has been developed. Today raisin manufacturing is a highly technical operation—a synchronized motion of machinery for sorting, grading, processing and automatically packing specialty products with speed and the exactness characteristic of mechanized production. Considerable energy has necessarily been devoted to research. Exhaustive study and countless tests were required to perfect the "seeded raisin that isn't sticky" popularly called "puffed." Manufacturing research has been solicited to develop products for specialized outlets. A closely calipered grade of plump juicy fruit for confectioners and a type for bakery use are typical creations.

An integral part of the Sun-Maid Growers' Association's manufacturing program has been the rigid enforcement of standards. Requirements of the product as to size, color, plumpness, meatiness, pliability, sugar content and moisture are set forth in minute detail. Automatic packaging, though confronted with obstacles by reason of the nature of the product, has been mastered and constitutes the final link in the association's all-mechanical arrangement.

Though many varieties of grapes are grown, only a few possess the qualities for drying. Present production is practically limited to three varieties—muscats, with seeds (usually distributed in seeded form), Thompson seedless, grown without seeds; and sultanas, similar to the latter but having a more intense subacid flavor. Great care is taken to see that raisin grapes are harvested in full maturity.

The initial manufacturing step is the separation of the berries and the main stems by friction. This is accomplished by wedging the raisins between a rotating and a stationary screen. Subsequently, a strong blast of air removes the stems, chaff, and immature and light berries. The fruit is then screened to size in accordance with the association's standards.

Raisins for "nectars" are subjected to a highly unique process used exclusively by the association. Under scientific control the fruit is pasteurized; the natural flavor and fragrance of the fresh grape are imparted; and the raisin is specially prepared so as to retain its tenderness and juiciness.

Though a small tonnage of muscats is packed "loose," that is, without further processing, the major portion is distributed in seeded form. As an aid to separating the seeds and the berries, and removing the cap-stems, the raisins are conveyed through a huge drier. An added advantage of this treatment is equalization of the moisture content. Two systems of processing are in vogue —"puffed," and the so-called old style methods. The former, regarded as an achievement in raisin manufacturing, has practically supplanted the old style seeded raisin.

Apparatus for Treating Chocolate

U. S. Patent 1,727,444 *to William E. Prescott and John P. Bunce, Assignors to Baker Perkins Co.; Official Gazette of U. S. Patent Office, Sept.* 10, 1929, *p.* 330.

THE patent covers an apparatus for conching chocolate, comprising a tank, a rotor having a sinuous mixing blade extending lengthwise of the tank, and a plurality of annular blades mounted on said mixing blade the surfaces of which are substantially perpendicular to the axis of rotation of the rotor.

Sugar—The Master Preserver

By Stroud Jordan. Food Industries, vol. 1, *p.* 207 (1929).

IN desiccating fruit products the solids-to-water ratio is changed, preventing fermentation and the action of destructive bacteria. The cause of this effect is directly traceable to the preservative action of sugars, and this action will vary with the solubility in water of the individual sugar.

In the production, marketing, and sale of confectionery, as with other food products, cane sugar (sucrose) is very important from the standpoint of its preserving action. Its solubility is a prime factor and where one must produce sweets that are soft and still low enough in moisture to withstand the ravages of an atmosphere filled with yeasts and molds, its use must be supplemented by more soluble sugar mixtures. At ordinary atmospheric temperatures cane sugar has a solubility in water that rarely exceeds 67%, whereas invert sugar (an equal mixture of the sugars dextrose and levulose) will dissolve in a proportion up to 85%.

The higher solubility of invert sugar is not permanent. Dextrose, because of its lower solubility, will separate out after long standing or when subjected to low temperatures. To offset such a condition a two-to-one mixture of invert sugar and cane sugar is used, which greatly reduces the tendency of dextrose to crystallize. A mixture of cane sugar, dextrose and levulose acts in a very different manner from the mixture of dextrose and levulose alone.

In the manufacture of fondants or other sugar confections composed of a number of sugars the proper sugar ratios must be maintained or a certain amount of invertase must be added to transform some of the cane sugar into invert sugar. One of the greatest steps forward in the production of quality confections has been the direct outcome of proper sugar use and the utilization of the enzyme invertase to bring about the proper ripening and preserving action in the goods itself.

The proper combination of sugars will produce a product that will keep under average conditions, but it is not reasonable to suppose that such a product may be left lying around in any sort of temperature and humidity. Some confections will keep in containers that allow for the breathing off of excess moisture; others must be closed tight to prevent loss or absorption of moisture, but nuts and confections containing them require different treatment. They must be kept away from the air if the manufacturer or confectioner would prevent oxidation of the oils they contain and the subsequent rancidity that always accompanies such action.

Critically correct concentration of sugar in a product, and its proper handling thereafter, will cut the waste bill of the candy manufacturer many times, but where no care is given to the sugar percentage or the method of handling after the goods are made, rebate checks will continue to be written, and waste cans will still have to be regarded as regular equipment.

Census of Cocoa and Sugar Confectionery Trades

Third (British) Census of Production (1924), *Preliminary Reports, No. 27; Food Manufacture, vol.* 3, *p.* 489.

STATISTICS of quantity and selling value covering output in 1924 are given for firms in Great Britain whose returns were made on the Schedule for the Cocoa and Sugar Confectionery Trades. About one-tenth of all cocoa and chocolate manufactured for sale in 1924 was exported, the lower export value (£5 per cwt. as against £7 19s. per cwt. in the case of the total production) being probably due in part to the fact that over 70% of the total exports consisted of cocoa not containing sugar. In the case of sugar confectionery (including chocolate confectionery) the quantity exported was about one-twentieth of the aggregate quantity produced. Net imports consisted chiefly of sweetened chocolate in bars and blocks, obtained from Switzerland.

The quantity of sugar confectionery (including chocolate confectionery) available in 1924 for consumption in Great Britain was sufficient to provide somewhat over a quarter of a pound weekly for each inhabitant, if manufactured cocoa and chocolate be included, and if such duplication as may arise from the purchase, in certain cases, of chocolate for use in making confectionery be ignored, the supply would represent very nearly five ounces per head.

The net output of all factories covered by this statement was £17,133,000 in 1924, that sum representing the amount by which the total value of the output (£41,225,000) exceeded the cost of materials purchased and used (£24,092,000). The net output per head of persons employed was £216.

The average number of persons employed during 1924 was 79,496, of whom 68,458 were recorded as operatives and 11,038 as management, clerical and technical staff. The total capacity of engines at these factories was 16,446 horsepower, of which nearly 38% was in reserve or idle during the year.

Peanut Butter with Yeast

U. S. Patent 1,708,914 *to Banesvar Dass, assigned to Ellis-Foster Co., N. J.*

DRIED yeast is incorporated in peanut butter to give a product containing vitamins A, B and C. The presence of the yeast tends to reduce the tendency of the peanut butter to stick to the roof of the mouth.

Artificial Coffee Aroma

U. S. Patent No. 1,696,419 *to Hermann Staudinger, Freiburg, Germany, and Thadeus Reichstein, Zurich, Switzerland.*

THIS patent covers an interesting method of artificially mixing substances known to be constituents of the aroma of coffee, or substances which are chemically similar thereto. The ten previously known constituents of coffee aroma are listed. Thirty or forty constituents previously unknown are described—some of them of special importance in producing the aroma of coffee.

It has been observed that certain compounds found in the aroma of coffee may be imitated quite successfully by synthetic chemicals having a similar structure. It is not essential to add all of the constituent

parts of the natural aroma to produce a synthetic aroma, as some of these constituents are relatively unimportant.

Almonds Found Good Diet for Diabetics

Anon. National Nut News, vol. 3, *p.* 78 (1929).

ALMONDS and almond meal are of value for the dietary treatment of constipation and diabetes and of epilepsy in children, according to a report made by scientists of the University of California before the section of agricultural, biological and organic chemistry at the thirteenth annual meeting of the American Association for the Advancement of Science at the University of California in June.

Refined Sugar

Louis Lang. Food Industries, vol. 1, *p.* 608 (1929).

THE refining of sugar is characterized by the fact that there is practically no contact between human hands and the finished product. Sugar is handled for the most part in solution by pumps and through pipe lines; when in crystalline form it is transferred by belt conveyors, bucket elevators and similar equipment.

The raw sugar is mixed with a heavy syrup and allowed to flow into centrifugal machines, where the adhering syrup is thrown off by centrifugal force and the sugar crystals retained in the basket. A fine spray of water is played on the sugar, which further washes the syrup from the surface of the crystals, leaving the partially purified washed sugar in the basket. The washed sugar is then dissolved, making a solution with a density equivalent to about 60 per cent sugar content.

This solution, however, is still dark in color and is cloudy. It also has an acid reaction, due to the organic acids present in the raw sugar. Milk of lime is added in sufficient quantity to make the sugar liquor very slightly alkaline. Diatomaceous earth is added at this point and the solution is agitated and filtered, a brilliant, sparkling liquor passing through the filter. In order to make the higher grades of granulated sugar, the straw-yellow color of the liquor must be removed, which is accomplished by the use of bone black. The liquor emerging from the bone black filter, which is clear and water-white, is pumped to the vacuum pans where it is boiled to grain.

Observation glasses from top to bottom make it possible for the operator to see the boiling mass, and a "proof stick" allows a small sample to flow out for close examination. Accurate thermometers and vacuum gauges, permanently installed, facilitate scientific control of the process. The sugar boiler concentrates the liquor in the vacuum pan until it crystallizes it, so controlling the growth of the crystals as to achieve a fairly uniform size of grain with a maximum yield. Next, the bottom of the pan is opened and the magma of crystals, with adhering mother liquor, flows by gravity into mixers below the pan.

From the mixers the magma flows by gravity to the centrifuges, where again centrifugal force separates crystals from adhering syrup. The mass, while still in the machine, is automatically washed with a fine spray of filtered hot water. This wet, white sugar drops from the centrifugal machines to bucket elevators by which it is lifted to granulators—long rotary cylinders through which heated air is drawn by fans. Scoops are so arranged in the granulator as to lift the sugar and drop it repeatedly as it moves through the machine, a current of hot air removing the moisture. The dry granulated sugar, still quite hot, then falls to a similar granulator and is there cooled by a blast of cold air. Inclosed screens assort the cooled sugar into different sizes of crystals, whereupon the sugar goes by gravity to the barrel-filling department or, by conveyors, to the package department.

The fact that sugar is so easily handled in solution is now being utilized by a number of industries. Sugar in syrup form is now sold in drums and in tank cars. A specially constructed glass-lined tank truck, which pumps the syrup to the upper floors at the point of destination, is used for city delivery.

In the use of sugar liquor there are no barrels nor bags to handle, no danger of getting bits of wood and nails in the sugar from carelessly opened barrels, together with elimination of cost and trouble incident to making sugar solutions, and a fixed saving in the cost of the container.

Hermetically Sealed Friction Top Can

Albert C. Johnson. U. S. Patent 1,695,286.

THE can is made in such a way that it has a double top, the outer part of which can be opened with a can opener and thus disclose inside a friction top container. Its purpose is to provide an air-tight receptacle with a friction cover that can be used after the air-tight closure has been removed.

Powdered Chocolate

Wharton B. McLoughlin. U. S. Patent No. 1,694,391.

THE invention describes a method of producing chocolate in a finely powdered form. This is accomplished by spraying melted chocolate into a current of cold air, the temperature of which is below the solidifying point of chocolate. The resultant product collects in the form of a fine powder which can be stirred into syrup, ice cream mixtures, etc. The process is successful with chocolate containing as high as 30 per cent of cocoa butter.

Prostituting Chocolate Quality for Volume Production

(*Continued from page* 51)

a profit at 10 cents means quantity production and cheap labor, and, judging from the recent movements on the west coast of Africa, even under these conditions the profit cannot be too good. Quantity cannot come into the subject until a prolific cacao of the better kind has been found. Here, indeed, is research worthy of the best efforts of the plant breeders.

At present, the world is perforce content with the prolific inferior cacaos, and it is this very contentment that threatens the cacao industry. No country outside Africa can produce cacao at 10 cents per pound at a profit. Why, therefore, should other countries which, with few exceptions, grow better cacao, continue in the business? All the cacaos of Central America both cost and are worth 2 cents per pound and upwards above the price of Gold Coast and Nigerian cacaos on quality and economic considerations, and the critic is, therefore, driven to the opinion that the chocolate manufacturer is far less concerned with quality than he should be, and that he continues to be obsessed by the idea that the cheapest raw cacao is the best value for money.

Chickens Come Home to Roost

One is compelled to ask why the American public does not like plain, straight chocolate. Is it because the taste of chocolate does not appeal, or because the taste of the plain chocolate, with which he has been tried, is not liked? Undoubtedly it is the latter, and the American public is no fool! Give the people chocolate with the flavor of the better grades of cacao and their approval will be shown with no uncertain voice, but just as it has taken many years to lower the quality of chocolate and the public taste together, so will it take more years to raise them. And the manufacturer asks himself, to his damnation: "Is it worth while?"

(*To be continued*)

Webster with Highland Chocolate

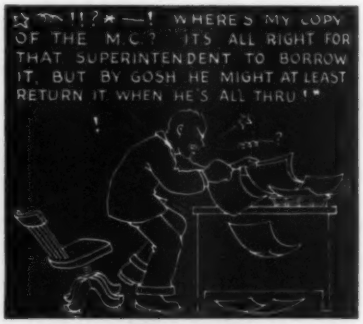
Commencing January 1, 1930, Mr. Harry G. Webster, formerly Vice-President and Works Manager, of the Rice Chocolate Company, assumed charge of the Service Division of the Highland Chocolate Company of Roxbury, Mass.

The Webster Service Division will manufacture only the finest of chocolate coatings. In addition to his duties in connection with this specialized service, Mr. Webster will superintend the manufacture of all of Highland Chocolate Company's coatings.

Sylvania to Start Production Soon

The new plant of the Sylvania Industrial Corporation, now under construction at Fredericksburg, Va., will shortly be ready for occupancy. It is expected that production of their moisture-proof Fenestra, a transparent cellulose wrapping paper, will commence immediately upon completion of the first unit of this plant and that it will reach the market some time in February.

Sylvania have acquired the business of Messrs. Birn & Wachenheim and will continue the importation of Belgian Fenestra. This is in addition to the manufacture of their transparent cellulose paper, the American rights of which they have acquired from the Societe Industrielle de la Cellulose.



*That's the one bad feature about THE MANUFACTURING CONFECTIONER—each issue contains such valuable information that one is *never* through with it—and it should *always* be on hand for ready reference.

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Air Flotation Speeds Goal of "Soluble" Cocoa

(*Continued from page 39*)

the troubles of cocoa powder manufacture. The cake still has to be disintegrated and cooled before it can be separated. However, the process does remove the worst of the trouble, the care and cleaning of sieves. It is practically dustless. It is a decided advance in manufacturing method and one which should command the attention of all makers of powder, and particularly those who press at all hard.

Whatever may be the individual opinion of this method of separation, it is here to say—if not in its present form, at least in some other form which utilizes the same principles. It is without doubt essential to the manufacture of fat-dry powders as these have to be in a form approaching the colloid in order to have any real value. These powders find their greatest outlet in the baking trade where an excess of butter affects the processes peculiar to that trade. They have made the prepared chocolate drinks possible because their particles will stay in suspension longer. There are already many uses for such powders, and their number is growing daily.

Powders Must Be Judged by Results

While it is true that in some cases very fat-dry powder is the only type which can be used, the majority of the products containing cocoa powder would probably be materially improved if good powders of the old description were used, provided, of course, that they were manufactured by firms who recognized the importance of fine milling of the nib. A majority of the present wind-sifted powders, sorry to say, are not made from high-grade beans, some being made from very questionable ones.

While to a large extent the poor average quality of these cocoas is the result of the continual demand for something cheaper, what is even more important is that the makers of high-priced powders do not as a general rule make the fat-dry powders nor use the new method of separation. Wind-sifted powders should be judged entirely by the results they give and not because of the novelty of the process, because well-made cocoa powder, sifted through silk, still possesses all of its old-time merits, air flotation having done nothing to improve the quality of the beans used.

Answers to This Month's Questions

1. *What is meant by the "Candy Distribution Survey" and what is its significance to the Candy Industry?*

Ans. The survey of candy distributing methods and the costs of doing business was undertaken by the U. S. Department of Commerce in cooperation with the Candy Industry. Authentic data as to the relative costs of handling different classes of goods through various distributing channels as well as of contacting various classes of accounts will become available to the Candy Industry for the first time.

2. *Three candy manufacturers have been chosen as representative of the type of firm disposing of its products mostly through jobbers—to have their books analyzed in connection with the Survey. Who are they?*

Ans. Henry Heide, Inc., New York City; New England Confectionery Company, Cambridge, Mass.; American Candy Company, Milwaukee, Wisconsin.

3. *Where and when is the next International Congress of Manufacturers of Chocolate and Cocoa to be held?*

Ans. In Antwerp, Belgium, September, 1930.

4. *Who invented the first practical chocolate coating machine?*

Ans. Daniel M. Holmes of New York.

5. *What is meant by the "Kihlgren System"?*

Ans. An attachment to a chocolate coating machine for automatic stringing or decorating.

6. *What large manufacturing and distributing company employs the novel method of promoting sales, of sending out a motor truck caravan equipped as a school to educate the foremen and superintendents of the major industry which they contact?*

Ans. Fleischmann Company, now Standard Brands, Inc.

7. *What industry still makes extensive use of the basket coater?*

Ans. The Biscuit Industry.

8. *What adulterant of cocoa butter has met the fate of being grossly adulterated itself?*

Ans. Illipé butter, or Borneo tallow.

9. *What added complication does the presence of milk introduce into a coating?*

Ans. In the continued presence of moisture, the acid in the milk tends to produce a proportionately large amount of invert.

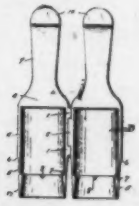
10. *What is overheating likely to do to a chocolate coating?*

Ans. It is likely to cause the coating to become "mushy", most chemical reactions being enormously speeded up in the presence of high heat.

WHAT'S NEW?

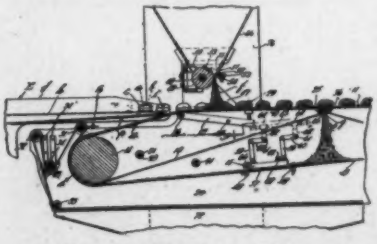
New Patents

1,714,834. Confection Implement. Walter E. Wilson, Grand Junction, Colo., assignor to Kick Products Corporation, Grand Junction, Colo., a Corporation of Colorado. Filed Mar. 26, 1927. Serial No. 178,759. 2 Claims. (Cl. 226—19.)



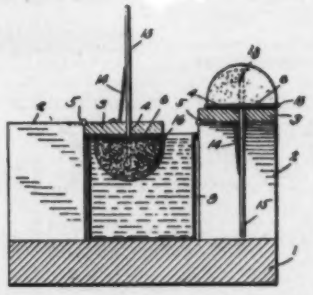
1. A filler for cylindrical cartons, comprising a pair of semi-cylindrical trough-like bodies, each closed at one end and open at the other, each of said bodies having a gauge shoulder formed around the outer face and tapering from the shoulder to the adjacent edge and each body having a carton edge supporting shoulder formed about the inner face and tapered from this shoulder to the adjacent edge, a hinge connection between two contacting edges of the bodies positioned inwardly of the open ends from the gauge shoulders, and a handle extending longitudinally of each body from the closed end, said handles assuming a side by side position upon bringing the edges of the body together, the distance longitudinally of the bodies between the gauge shoulder and the carton edge supporting shoulder bearing a definite relation to a carton of standard size designed to fit in and between the bodies.

1,711,716. Confection-Coating Machine. Alonzo Linton Bausman, Springfield, Mass., assignor to National Equipment Company, Springfield, Mass., a Corporation of Massachusetts. Filed May 25, 1926. Serial No. 111,665. 9 Claims. (Cl. 107—1.)



1. The combination with a conveyor for carrying freshly coated confections, of a conveyor for carrying a layer of finely divided solids past the delivery end of the first named conveyor whereby said confections are successively deposited on said layer and become partially coated with said solids, a third conveyor having its receiving end separated by a small gap from the delivery end of the second conveyor, whereby the portions of said layer in the spaces between the confections fall through said gap, a conveyor underlying said gap and receiving the solids falling therethrough, and a plow for spreading such solids over the last named conveyor in a layer of substantially uniform depth, said last named conveyor being arranged to transfer said layer to the second named conveyor.

1,711,599. Apparatus for Coating Confections. Hobart W. Harper, La Crosse, Kans. Filed July 26, 1927. Serial No. 208,642. 1 Claim. (Cl. 91—60.)



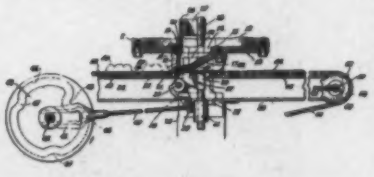
The combination with a base, and upstanding supporting means thereon at the sides thereof, of a tank supported by the base between said upstanding means, oppositely disposed strips hingedly connected to said supporting means and separately insertable to position over the tank, there being a longitudinal series of apertures in each of the strips, yielding retaining means supported in an inclined position adjacent each of the apertures, sticks insertable through the respective apertures into frictional engagement with the ends of the retaining means, said means pressing the sticks laterally to bind them against opposed portions of the wall of the aperture in which they are seated, confection supporting disks carried by the sticks, spacing devices on each strip for holding the disks away from the strips, said sticks and disks being invertible with the strip thereby to support an engaged confection within the tank, and a disk holding pocket on the base beyond one end of the tank, said pocket including opposed upstanding walls and a centering pin.

1,718,997. Frozen Confection. Harry B. Burt, Youngstown, Ohio; Cora W. Burt and The Dollar Savings and Trust Company, executors of the will of said Harry B. Burt, deceased, assignors to Cora W. Burt. Filed Jan. 30, 1922. Serial No. 532,810. 7 Claims. (Cl. 99—16.)

1. A frozen confectionery product including a frozen body portion formed of an edible substance which is fluid at normal temperatures and congeals by refrigeration, and a stick member partially embedded in the body portion and attached thereto by congelation, the projecting end of the stick member forming a handle.

2. A frozen confectionery product including a frozen body portion formed of an edible substance which is fluid at normal temperatures and congeals by refrigeration, and a handle member formed of hard candy and attached to the body portion by congelation.

1,724,563. Method for Forming Confections and Machine for Carrying Out Such Method. Simon Cooper, Brooklyn, N. Y., assignor to Mason, Au & Magenheimer Confectionery Manufacturing Company, Brooklyn, N. Y., a Corporation of Virginia. Filed May 4, 1921. Serial No. 466,844. 34 Claims. (Cl. 107—4.)



7. The method of forming confections having plain bottoms and upwardly extending protrusions defined by depressions, consisting in feeding plastic material through a container, discharging such plastic material from said container in a plurality of units, and subjecting each unit while being discharged to several operations, one operation including the formation of a plain bottom and another operation including the formation of the depressions defining the upwardly extending protrusions.